
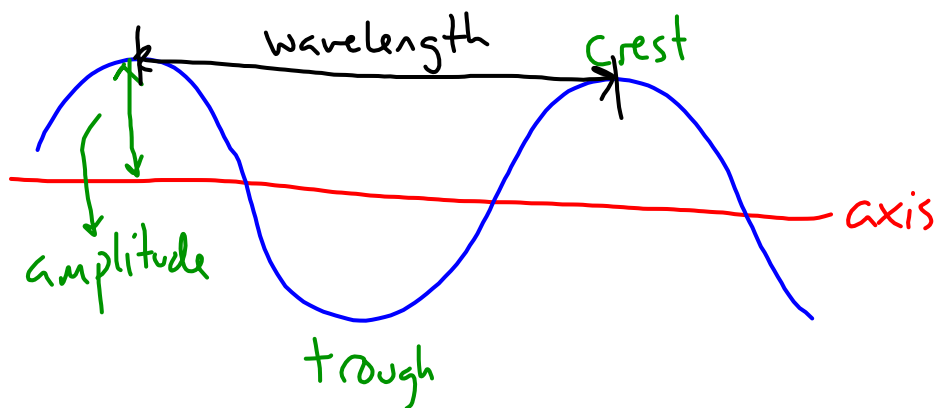


## Waves

- Definitions: 
  - Waves → oscillations that carry energy
  - Medium → matter through which a wave moves
- Wave subsets:
  1. Mechanical → waves that require a medium to travel (sound, earthquakes)
  2. Electromagnetic → does NOT require a medium to travel
- More Information:
  - Most waves are caused by vibrating particles
  - Energy is transported, but the particle only moves in a small area
  - Waves are classified according to the direction in which the particles in the wave move
    - Transverse
    - Longitudinal

- Transverse Waves:
  - Particle motion is perpendicular to direction of wave motion (direction energy is transferred).
  - Examples: Water waves, Electromagnetic waves, earthquake S-waves

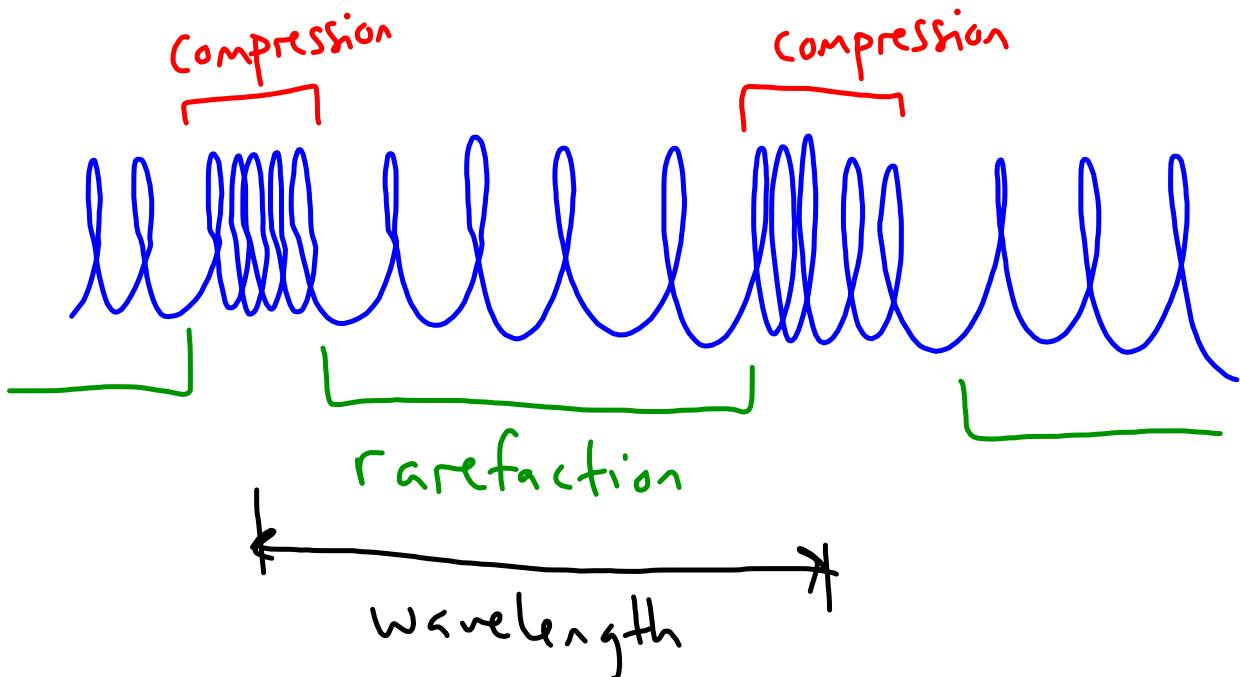
- Parts:



- Wavelength  $\rightarrow$  length of 1 full cycle
- Amplitude  $\rightarrow$  length from axis to crest
- Crest  $\rightarrow$  highest part of a wave
- Trough  $\rightarrow$  lowest point of a wave
- Resting state  $\rightarrow$  the very middle, as if there were no wave (where I drew the axis)

- Longitudinal Waves:

- Particle motion is parallel to the direction of wave motion
- Examples: sound, earthquake p-waves



- Compression → area where medium is pushed close together
- Rarefaction → area where medium is further apart